13 Annex 4 : Review of the spatial distribution of the Spanish and Portuguese discard sampling in bottom trawlers in Division IXa

Review of the spatial distribution of the Spanish and Portuguese discard sampling in bottom trawlers in Division IXa

Working document for the 2008 RCM-NA

Quinzán, M.; Moura, O.; Pérez, N.; González Herraiz, I.

One of the terms of reference of the fourth Regional Coordination Meeting on North East Atlantic (RCM-NEA) held in November 2007 was:

> *"Propose a regional design and regional protocols for the collection of biological data in the view of the new DCR for the fleet based approach and SGRN recommendations: the proposal should include suggestions for the sampling intensities and precision levels wherever possible*
>
> *In this view, the following aspects will have to be tackled:*
>
> *a. review the status of the current work carried out on concurrent sampling*
>
> *b. discard sampling*
>
> *c. future design and arrangements for collection of biological data (growth/otoliths, maturity, fecundity) and their analysis (age reading, etc.)"*

During the meeting throughout the discussion of this point the following thoughts were referred:

- Due to the high number of assessed stocks within the RCM NEA area, for which discard information for assessment purposes may be required, there is a need to co-ordinate discard sampling internationally to improve coverage by area and fleet.
- The RCM agreed to exchange more detailed data before RCM 2008 to allow mapping of discard work and provide opportunities to discuss co-ordination and cooperation.
- Moreover, it is expected that the initiative taken by ICES (PGCCDBS, 2007) to request a standalone data section in each assessment Working Group report will be implemented as soon as 2008. Such a data section describing the concrete actions needed to improve the quality of the data used, in particular the need to set up discards sampling programmes, will have to be discussed for action during the future RCM. RCM NEA strongly approves the ICES initiative.

In order to begin concretely the co-ordination of discards sampling, RCM NEA decided to initiate two case studies which will produce essential elements for discussion in the next RCM.

This working document deals with the study case 1.

Study Case 1 Review of the spatial distribution of the Spanish and Portuguese discard sampling in bottom trawlers in Division IXa

Spain and Portugal carry out several trips with discards observers on board in the bottom trawlers directed to demersal fishes in the ICES Divisions VIIIc and IXa. The aim of this

study is analyzing the spatial distribution of the observed trips by the two countries in Division IXa to see if there is sampling overlapping between both countries, and also to compare both sampling and fleets effort distributions. A working document will be produced for discussion at RCM NEA in 2008.

RCM NEA 2007 Recommendations	RCM NEA recommends a case study for analyzing jointly the spatial distribution of Portuguese and Spanish discard sampling in IXa and its presentation for discussion in the 2008 RCM NEA.
Follow-up actions hended	Each MS to provide positions of the observed trips and spatial distribution of the fleets' effort. Working document for the next RCM NEA.
Responsible persons for follow-up actions	I. González Herraiz (Spain) and O. Moura (Portugal)
Time frame (Deadline)	Autumn 2008

The number of samples to be collected in Portuguese bottom trawl fisheries (Crustacean and Fish fleets) was estimated from the total number of trips of the fleet (vessels above 15 m), for the years 2004 and 2005.

During 2007 Portugal sampled 50 trips by on-board observers in the bottom-trawling fleet in Div. IXa (38 trips on fish fleet and 12 trips on crustacean fleet) (Technical REPORT – 2007 Portuguese Program for the collection of fisheries data Table 7.1. - "Discard sampling").

Figures 1 to 5 show the spatial distribution of Portuguese and Spanish discard sampling in IXa, during the period 2005-2007.

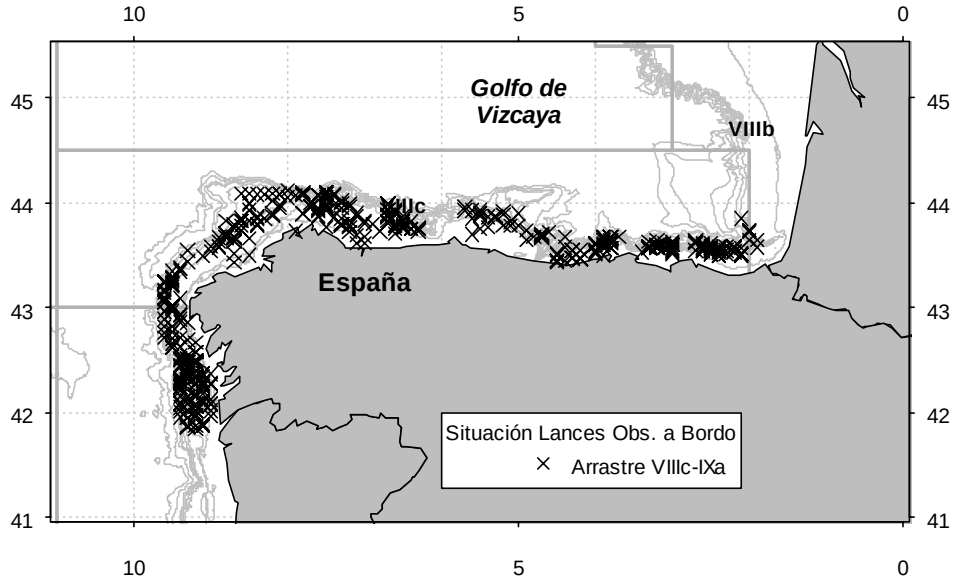

Figure 1 - Spatial distribution of sampling hauls performed from the Spanish trawl fleet in Divisions VIIIc and Ixa

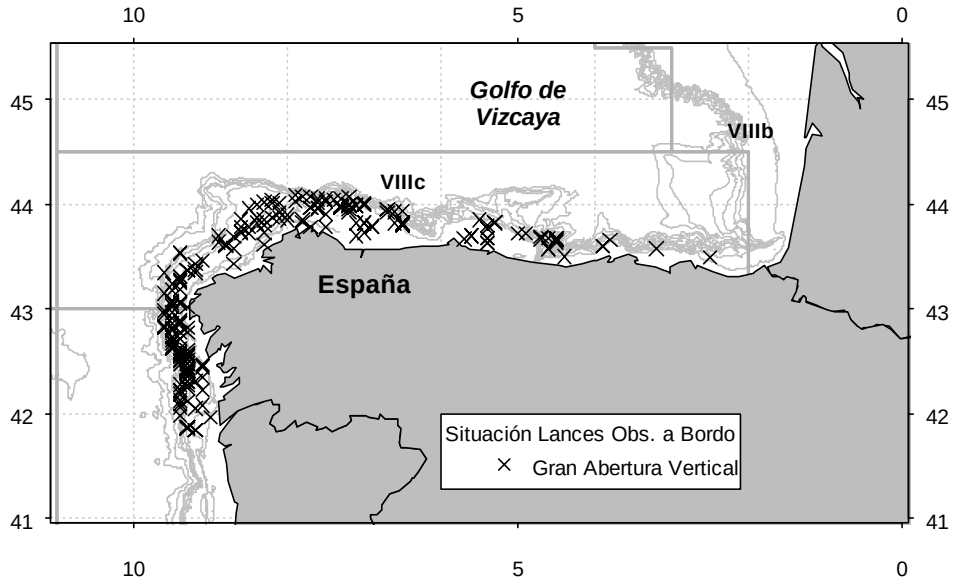

Figure 2 - Spatial distribution of sampling hauls performed from the Spanish High Opening Bottom Trawl fleet in Divisions VIIIc and IXa.

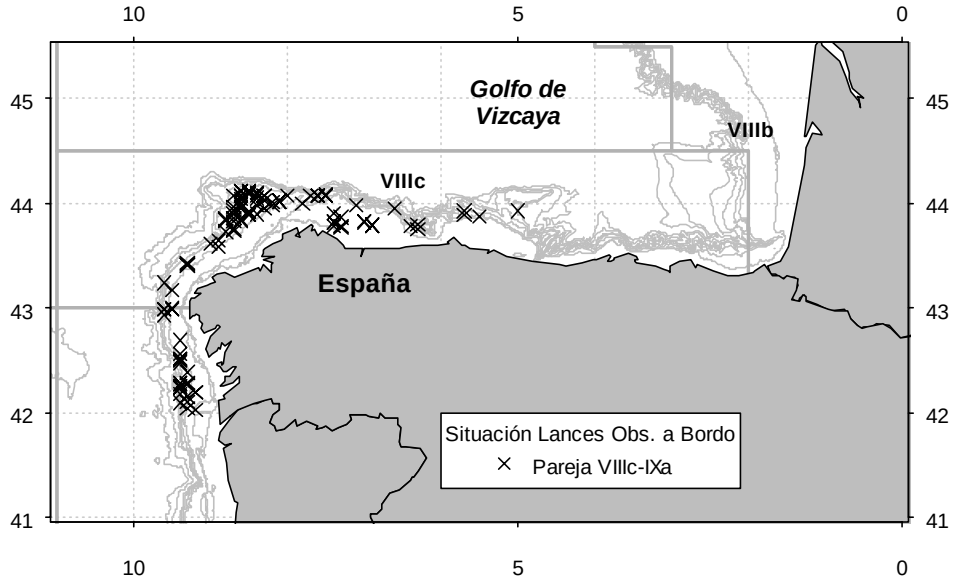

Figure 3 - Spatial distribution of sampling hauls performed from the Spanish Pair Bottom Trawl fleet in Divisions VIIIc and IXa.

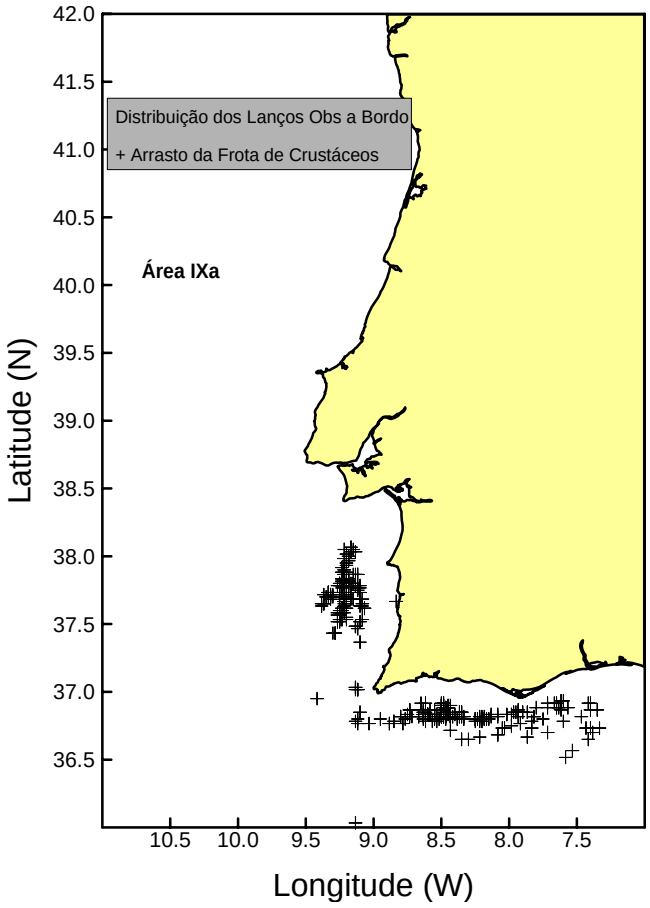

Figure 4 – Spatial distribution of sampling hauls performed from the Portuguese crustacean trawl fleet in Division IXa.

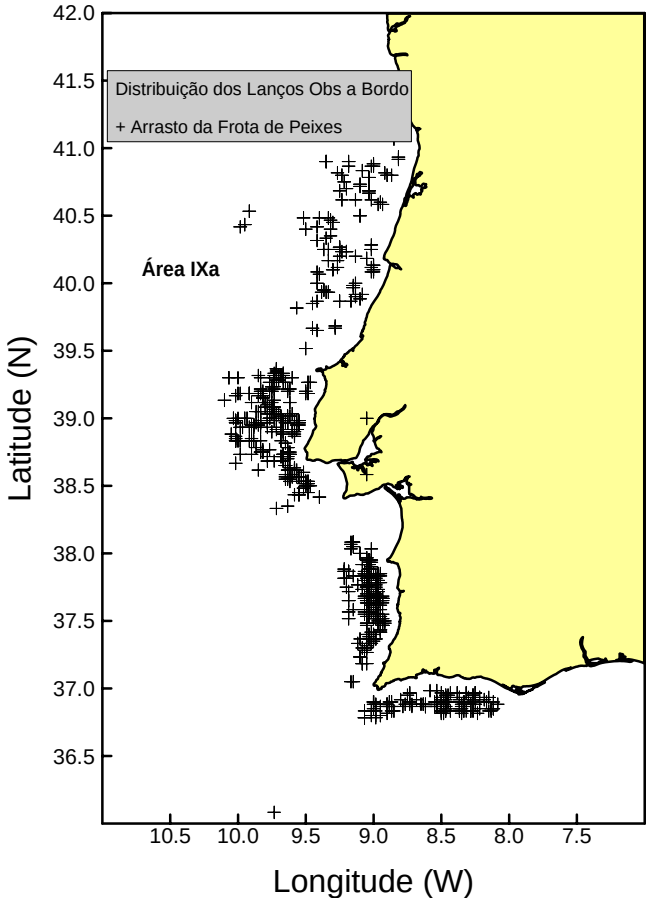

Figure 5 - Spatial distribution of sampling hauls performed from the Portuguese fish trawl fleet in Division IXa.

The observation of the figures allows concluding that the spatial distribution of the discard sampling effort performed in Spanish and Portuguese fleets, conducted routinely, do not overlap.

Nevertheless, Spain has a short and sporadic number of vessels operated in Portuguese's waters based in only one Spanish port (Marín). Those vessels are not sampled under the DCR due to the reduced number of effort in the area and the long duration of the trip. That behaviour makes very expensive to sample this fleet when it operates in Portuguese waters. Trips from the same port but fishing in Spanish waters are shorter and they are sampled under the DCR.

Over the years 1994, 1997, 1999 and 2000, Spain carried out 15 discard sampling experiments with Spanish trawl vessels fishing in Portuguese waters (below parallel 42º00'00'').

Table 1 shows the data obtained in these experiments in order to compare discard percentage and total catch composition of the Spanish trawler fleet in both Spanish and Portuguese waters in ICES Division IXa. Caught species subjected to DCR are displayed.

	Discard percentage				Total catch			
	Spanish waters		Portuguese waters		Spanish waters		Portuguese waters	
Specie	**%**	**CV**	**%**	**CV**	**%**	**CV**	**%**	**CV**
Aphanopus carbo	100.0	656	100.0	387	+	656	+	387
Argentina sphyraena	91.9	181	99.6	154	0.3	163	0.4	155
Boops Boops	0.0				+	656		
Cancer pagurus	0.0		0.0		+	240	+	214
Centroscymnus coelolepis	100.0	511	100.0	219	0.1	511	+	219
Helicolenus dactylopterus	72.4	226	50.5	209	0.1	230	0.3	171
Homarus gammarus	0.0		0.0		+	479	+	387
Hoplostethus atlanticus			100.0	280			+	280
Lepidorhombus boscii	29.8	109	20.6	155	2.0	87	2.1	103
Lepidorhombus whiffiagonis	16.2	319	4.3	268	+	227	0.1	168
Loligo vulgaris	3.0	656	8.7	387	+	340	+	245
Lophius piscatorius	0.0		0.5	387	0.3	184	0.6	110
Merluccius merluccius	15.8	259	20.4	140	4.5	106	3.8	98
Micromesistius poutassou	80.2	114	78.6	156	27.8	89	6.8	128
Mullus surmuletus	89.9	656	0.0		+	591	+	370
Nephrops norvegicus	2.0	209	3.7	180	0.7	147	0.6	74
Octopus vulgaris	1.4	656	2.0	351	0.1	222	0.5	156
Pagellus acarne	0.0		0.0		+	390	0.1	316
Parapenaeus longirostris	84.8	656	97.9	327	+	656	+	321
Raja brachyura			48.5	278			+	229
Raja clavata	0.0		19.2	387	+	656	0.2	387
Raja montagui			0.0				+	387
Raja naevus			82.1	286			0.5	264
Rajidae	11.7	623	5.4	387	0.1	582	0.1	306
Scomber japonicus			100.0	387			+	387
Scomber scombrus	9.5	288	40.4	230	3.8	291	0.5	205
Solea solea	0.0		0.0		+	574	+	284
Trachurus trachurus	1.7	359	14.8	241	4.0	233	1.4	322
Trisopterus luscus	29.4	271	16.0	210	2.8	157	1.7	143
Other species no subjected to DCR								
Eledone cirrhosa	2.3	593	5.6	228	2.9	153	1.0	100
Macroramphosus scolopax	100.0	587	100.0	214	1.9	435	19.7	214
Munida spp.	99.9	409	71.7	105	2.3	390	0.3	147
Polybius henslowi	100.0	285	100.0	191	26.0	273	21.5	191
Scyliorhinus canicula	81.5	165	90.9	198	0.4	150	6.3	184

+ less than 0.1

DCR = Data Collection Regulation

Table 1. Spanish trawler fleet Discard weight percentage of Caught Species subjected to DCR and Spanish trawler fleet Total Catch weight composition in percentage of species subjected to DCR

As can be seen in Table 1, species composition subjected to DCR of the Spanish and Portuguese fleets are very similar though some differences can be pointed. However, total catch percentage appears to be different in species that are not regulated under DCR (other species).

For blue whiting *(Micromesistius poutassou),* the observed total catch percentage seems to be higher in Spanish waters (28%) than in Portuguese waters (7%). Species as blond ray (*Raja brachyura*), cuckoo ray *(Raja naevus*) and Atlantic mackerel (*Scomber japonicus*) are catched in Portuguese waters but not in Spanish ones. Otherwise, bogue (*Boops boops)* is caught and retained by the fleet operating in Spanish waters.

Moreover, both fleets present very similar discard patterns for species regulated by DCR. Differences can be pointed out in red mullet (*Mullus surmuletus*), which is discarded on vessels operating in Spanish waters, but retained when working in Portuguese ones. Similar values for discard percentage are also observed for not subjected to DCR species.

In conclusion, differences, in discard and total catch estimations, are non relevant especially due to the usual high variability rates in discard and catch composition estimation. As a consequence, sampling the Marín fleet in Spanish waters is representative of the discard produce for this port in both Spanish and Portuguese waters.